

CLAIMS

1. A magnetic recording medium comprising a substrate, a perpendicular magnetic recording layer, and a soft magnetic layer formed therebetween, wherein the soft magnetic layer has a thickness of less than 100 nm, a magnetic anisotropy in a surface direction, and a $B_s \cdot H_c$, which is a product of a saturation magnetic flux density B_s and a coercive force H_c , of not less than $79 \text{ T} \cdot \text{A/m}$ ($10 \text{ kG} \cdot \text{Oe}$).
2. A magnetic recording medium comprising a substrate, a perpendicular magnetic recording layer, and a plurality of soft magnetic layers formed therebetween, wherein the plurality of soft magnetic layers have a total thickness of less than 100 nm, a magnetic anisotropy in a surface direction, and a $B_s \cdot H_c$, which is a product of a saturation magnetic flux density B_s and a coercive force H_c , of not less than $79 \text{ T} \cdot \text{A/m}$ ($10 \text{ kG} \cdot \text{Oe}$).
3. A magnetic recording medium as set forth in claim 1, wherein the magnetic anisotropy of the soft magnetic layer is in a radial direction of the substrate.
4. A magnetic recording medium as set forth in claim 1, wherein a hard magnetic layer which suppresses a magnetic wall formation in the soft magnetic layer, is disposed between the substrate and the soft magnetic layer.
5. A magnetic recording medium as set forth in claim 4, wherein the hard magnetic layer is constituted so as to be magnetized in a direction substantially parallel to the direction of the magnetic anisotropy of the soft magnetic layer.
6. A process for producing a magnetic recording medium having a substrate, a perpendicular magnetic recording layer, and a soft magnetic layer formed therebetween, wherein the soft magnetic layer is formed, such that the thickness of the soft magnetic

layer is less than 100 nm, the magnetic anisotropy thereof is in a surface direction, and a $B_s \cdot H_c$ is not less than 79 T · A/m (10 kG · Oe).

7. A magnetic reading-writing apparatus comprising the magnetic recording medium as set forth in claim 1, and a magnetic head for recording and reproducing information to the magnetic recording medium, wherein the magnetic head is a single magnetic pole head.